

WHAT IS CLAIMED IS:

1. An image display system, comprising:
  - an image precessing device; and
  - an electro-optic apparatus, comprising:
    - a pixel matrix, where pixels including optical elements are arranged in a matrix shape;
    - a plurality of scanning lines coupled to a pixel group arranged along either one of a row direction or a column direction of the pixel matrix;
    - a plurality of data lines coupled to the pixel group arranged along either one of the row direction or the column direction of the pixel matrix;
    - a scanning-line driving circuit that sequentially selects the plurality of scanning lines one by one;
    - a data-line driving circuit that outputs a control signal related to light emission of the optical elements to, at least, one data line of the plurality of data lines;
    - a control section that controls an operation of the scanning-line driving circuit and the data-line driving circuit; and
    - an input image data acquisition section that obtains input image data transmitted from the image processing device,
- wherein the image processing device generates the input image data to be inputted into the electro-optic apparatus and transmits the input image data to the electro-optic apparatus, and
- wherein the control section that controls the light emission time of the optical elements by a non-sequential scanning operation that selects a scanning line in a discontinuous order against an arranged order of the scanning lines, based on gradation data of a predetermined bit length corresponding to the input image data and a number of light emission gradation of the optical

elements, and gradationally displays an input image on a display area defined by a predetermined number of the scanning lines and the data lines.

2. The image display system according to claim 1, wherein a predetermined amount of pixel data, with a rearrangement that has been completed, is transmitted to the electro-optic apparatus every time the rearrangement has been completed.

3. The image display system according to claim 1, wherein the image processing device comprises:

- an input image data generation section;
- a frame memory; and
- an input image data transmission section.

4. The image display system according to claim 3, wherein the input image data generation section carries out image processing obtained from a personal computer to generation the input image data.

5. The image display system according to claim 4, wherein the input image data is rearranged according a selection order of the scanning lines by the non-sequential scanning operation in the electro-optic apparatus.

6. The image display system according to claim 3, wherein the frame memory includes two storage regions.

7. An image display system, comprising:  
an image precessing device; and  
an electro-optic apparatus, comprising:

a pixel matrix, where pixels including optical elements are arranged in a matrix shape;

a plurality of scanning lines coupled to a pixel group arranged along either one of a row direction or a column direction of the pixel matrix;

a plurality of data lines coupled to the pixel group arranged along either one of the row direction or the column direction of the pixel matrix;

a scanning-line driving circuit that sequentially selects the plurality of scanning lines one by one;

a data-line driving circuit that outputs a control signal related to light emission of the optical elements to, at least, one data line of the plurality of data lines;

a control section that controls an operation of the scanning-line driving circuit and the data-line driving circuit; and

an input image data acquisition means for obtainings input image data transmitted from the image processing device,

wherein the image processing device generates the input image data to be inputted into the electro-optic apparatus and transmits the input image data to the electro-optic apparatus, and

wherein the control section that controls the light emission time of the optical elements by a non-sequential scanning operation that selects a scanning line in a discontinuous order against an arranged order of the scanning lines, based on gradation data of a predetermined bit length corresponding to the input image data and a number of light emission gradation of the optical elements, and gradationally displays an input image on a display area defined by a predetermined number of the scanning lines and the data lines.

8. The image display system according to claim 7, wherein a predetermined amount of pixel data, with a rearrangement that has been completed, is

transmitted to the electro-optic apparatus every time the rearrangement has been completed.

9. The image display system according to claim 7, wherein the image processing device comprises:

- an input image data generation section;
- a frame memory; and
- an input image data transmission section.

10. The image display system according to claim 9, wherein the input image data generation section carries out image processing obtained from a personal computer to generation the input image data.

11. The image display system according to claim 10, wherein the input image data is rearranged according a selection order of the scanning lines by the non-sequential scanning operation in the electro-optic apparatus.

12. The image display system according to claim 9, wherein the frame memory includes two storage regions.

13. A method for manufacturing image processing device, comprising:

- arranging pixels including optical elements in a matrix shape;
- coupling a plurality of scanning lines to a pixel group arranged along either one of a row direction or a column direction of a pixel matrix;
- coupling a plurality of data lines to the pixel group arranged along either one of the row direction or the column direction of the pixel matrix;
- sequentially selecting the plurality of scanning lines one by one by a scanning line driving circuit;

outputting a control signal related to light emission of the optical elements to, at least, one data line of the plurality of data lines by a data-line driving circuit;

controlling an operation of the scanning-line driving circuit and the data-line driving circuit;

obtaining input image data transmitted from an image processing device;

generating the input image data to be inputted into an electro-optic apparatus and transmitting the input image data to the electro-optic apparatus; and

controlling the light emission time of the optical elements by a non-sequential scanning operation that selects a scanning line in discontinuous order against an arranged order of the scanning lines, based on gradation data of a predetermined bit length corresponding to the input image data and a number of light emission gradation of the optical elements, and gradationally displays an input image on a display area defined by a predetermined number of the scanning lines and the data lines.

14. The method according to claim 13, further comprising:

obtaining a bit length  $N$  of the gradation data indicating the light emission gradation of the optical elements and a numerical group obtained by dividing an added number, obtained by adding one to a total number of the scanning lines, with a proportion comprising  $2^n$  values ( $n = 0, 1$  and  $2$  through  $(N-1)$ ) of a number of bits in a bit string constituting the gradation data; and

associating a serial number to each of the scanning lines with the arranged order of the scanning lines.

15. The method according to claim 14, further comprising:

assigning a predetermined number of the serial numbers, which have been associated to the scanning lines, as an initial value corresponding to a least significant bit (0th digit) of the bit string constituting the gradation data; and

assigning a number, obtained by adding a largest number contained in the numerical group to the initial value corresponding to the least significant bit, as the initial value of the scanning line corresponding to a most significant bit ((N-1) digit) of the bit string constituting the gradation data.

16. The method according to claim 15, further comprising associating an added value, obtained by adding one to a bit-digit of another bit from a lower bit-digit, as an initial value of the other bit, out of the initial value corresponding to one digit higher than bit-digit of the other bit and the numerical values contained in the numerical group, sequentially from the higher bit-digit of the other bits, concerning the other bits between the most significant bit and the least significant bit.

17. The method according to claim 16, further comprising a first processing that selects the scanning line of the serial number indicated by the initial value corresponding to the least significant bit at first, and sequentially selects each of the scanning line of the serial number indicated by the initial values corresponding to the most significant bit and each bit, which is shifted bit by bit from the most significant bit towards the bit before the least significant bit.

18. The method according to claim 17, further comprising a second processing that makes the scanning-line driving circuit drive the scanning line of the selected number every time the scanning line is selected.

19. The method according to claim 18, further comprising a third processing

that adds one to a value that has been associated with each bit of the gradation data, respectively, while if the value corresponding to each bit of the gradation data after the addition exceeds the value, obtained by subtracting one from the total number of the scanning lines, the process updates the value to the minimum value of the serial number.

20. The method according to claim 19, further comprising a fourth processing that selects the scanning line, corresponding to the value that has been associated to each bit of the gradation data after the third processing, with the same sequence of the first processing, wherein a control program for the image processing device determines the selection order of the scanning lines by repeating the second processing through the fourth processing until all the scanning lines on the display area have been selected for each bit of the bit string constituting the gradation data, and generates the input image data based on the determined selection order.